

From: Shark Somayaji [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=3F8F35D9977B4F65AFFD4D5C04D96F44-SHARK SOMAY]
Sent: 10/21/2019 1:21:53 AM
To: Probal Mitra [Probal.Mitra@intusurg.com]; Gabriel Brisson [gabe.brisson@intusurg.com]; Paul Floyd [Paul.Floyd@intusurg.com]; Matthew Wixey [Matthew.Wixey@intusurg.com]
Subject: RE: Gamma Compatible RFID

As an FYI last time we used Gamma the RFID chip became totally unreadable – there was no response at all with any tool we had.. we couldn't even detect any of the chips any more ..

Regards
shark

From: Probal Mitra <Probal.Mitra@intusurg.com>
Sent: Friday, October 18, 2019 5:03 PM
To: Gabriel Brisson <gabe.brisson@intusurg.com>; Paul Floyd <Paul.floyd@intusurg.com>; Matthew Wixey <Matthew.Wixey@intusurg.com>; Shark Somayaji <Shark.Somayaji@intusurg.com>
Subject: RE: Gamma Compatible RFID

Thanks Gabe for pulling me in, and thanks Paul for digging into this!

As Gabe pointed out, I've been talking to our Cybersecurity team lead (Onur Aciicmez) and SW lead (Josh Radel) about the topic of people hacking our instruments. I've forwarded this thread on to them. Please keep me posted if you find out about methods to reprogram our RFID's, i.e. change the life-count so that instruments get re-used beyond their design life.

- Probal

From: Gabriel Brisson <gabe.brisson@intusurg.com>
Sent: Friday, October 18, 2019 4:44 PM
To: Paul Floyd <Paul.floyd@intusurg.com>; Matthew Wixey <Matthew.Wixey@intusurg.com>; Shark Somayaji <Shark.Somayaji@intusurg.com>; Probal Mitra <Probal.Mitra@intusurg.com>
Subject: RE: Gamma Compatible RFID

Thanks, Paul. Adding Probal as he is involved with the adding-lives issue.

Gabe.

From: Paul Floyd <Paul.floyd@intusurg.com>
Sent: Friday, October 18, 2019 4:42 PM
To: Matthew Wixey <Matthew.Wixey@intusurg.com>; Gabriel Brisson <gabe.brisson@intusurg.com>; Shark Somayaji <Shark.Somayaji@intusurg.com>
Subject: RE: Gamma Compatible RFID

Hi Gabe,

Not to distract from your original question to Shark regarding the gamma effect on the memory.

We met with Microchip a few weeks back (Gerry L. was also in meeting) and discussed our desire for a single use option. They did try to pitch a newer technology of theirs that is similar to Maxim's 1-wire. The take away from their pitch was that they stated their CryptoRF product line we currently use is not as secure. Not sure if this was just a sales move, however the applications manager seemed to be suggesting there may be opportunity to hack the chip we

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use. Bringing this up in the case our team wants to talk to that applications manager to understand more about what he was suggesting.

Thanks,

Paul Floyd
Mechanical Engineer

Mobile: 1 408 621 7430
Direct: 1 408 523 0727
Paul.floyd@intusurg.com

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From: Matthew Wixey <Matthew.Wixey@intusurg.com>
Sent: Friday, October 18, 2019 4:23 PM
To: Gabriel Brisson <gabe.brisson@intusurg.com>; Paul Floyd <Paul.floyd@intusurg.com>; Shark Somayaji <Shark.Somayaji@intusurg.com>
Subject: Re: Gamma Compatible RFID

+shark, see below

From: Gabriel Brisson
Sent: Friday, October 18, 2019 4:05 PM
To: Matthew Wixey; Paul Floyd
Subject: RE: Gamma Compatible RFID

Do you know if the memory got zeroed and the chips could be used again? Asking from the standpoint that maybe people could use this to get around our life-counting protections.

Gabe.

From: Matthew Wixey <Matthew.Wixey@intusurg.com>
Sent: Friday, October 18, 2019 3:40 PM
To: Paul Floyd <Paul.floyd@intusurg.com>; Gabriel Brisson <gabe.brisson@intusurg.com>
Subject: RE: Gamma Compatible RFID

Correct, Shark and I explored this at the beginning of SF60, we sent 30 harmonics through they were all not readable. I think this is one of 3 attempts to send RFIDs through gamma over the last 6-7 years...

From: Paul Floyd <Paul.floyd@intusurg.com>
Sent: Friday, October 18, 2019 3:31 PM
To: Gabriel Brisson <gabe.brisson@intusurg.com>
Cc: Matthew Wixey <Matthew.Wixey@intusurg.com>
Subject: RE: Gamma Compatible RFID

Hi Gabe,

Matt mentioned to me that there was a test done that verified the RFID gets wiped from gamma. I have copied Matt in case we need more detail.

Based on this info, my thought is to not pursue gamma testing with the RFIDs, unless you feel there is more to be confirmed.

Thanks!

Paul Floyd
Mechanical Engineer

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Direct: 1 408 523 0727
Paul.floyd@intusurg.com

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From: Paul Floyd
Sent: Friday, October 11, 2019 8:05 PM
To: Gabriel Brisson <gabe.brisson@intusurg.com>
Subject: Re: Gamma Compatible RFID

Hey Gabe,

Thanks for the info. I have some prototypes from unrelated projects running through gamma in the next few weeks, I'll throw some RFIDs in the test to see what happens. Will keep you updated.

Thanks!
Paul F.

Sent from my iPhone

On Oct 11, 2019, at 5:12 PM, Gabriel Brisson <gabe.brisson@intusurg.com> wrote:

Paul,

The Dallas chips had EEPROM, which could be erased even by exposure to strong UV light (if the chip were not encased in plastic.) I think flash works a lot different, so I don't know whether gamma erases it or not.

If you know/find whether our current RFIDs get wiped by gamma, I'd be really interested to know. It came up in a different context.

Gabe.

From: Todd Radgowski <Todd.Radgowski@intusurg.com>
Sent: Friday, October 11, 2019 3:22 PM
To: Paul Floyd <Paul.floyd@intusurg.com>
Cc: Matthew Wixey <Matthew.Wixey@intusurg.com>; Gabriel Brisson <gabe.brisson@intusurg.com>
Subject: RE: Gamma Compatible RFID

We were working on Si then so it was a pin contact at the time. We didn't look into the wireless chips then. Perhaps a call with Maxim to see what they might have in the wireless area.

From: Paul Floyd <Paul.floyd@intusurg.com>
Sent: Friday, October 11, 2019 3:12 PM
To: Todd Radgowski <Todd.Radgowski@intusurg.com>
Cc: Matthew Wixey <Matthew.Wixey@intusurg.com>; Gabriel Brisson <gabe.brisson@intusurg.com>
Subject: RE: Gamma Compatible RFID

Thanks Todd for the background,

It looks like these products are Maxim's 1-wire technology, which I believe requires a pin contact. Do you know if there were any specific RFID's that were discussed (no contact needed between carriage and instrument)?

Thanks,

Paul Floyd
Mechanical Engineer

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Direct: 1 408 523 0727
Paul.floyd@intusurg.com

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From: Todd Radgowski <Todd.Radgowski@intusurg.com>
Sent: Friday, October 11, 2019 2:19 PM
To: Paul Floyd <Paul.floyd@intusurg.com>
Cc: Matthew Wixey <Matthew.Wixey@intusurg.com>; Gabriel Brisson <gabe.brisson@intusurg.com>
Subject: RE: Gamma Compatible RFID

Paul,

It's been awhile but I think this might have been the type of Chips we were looking at before. This one says it is made to be able to withstand medical sterilization.

<https://www.maximintegrated.com/en/products/embedded-security/secure-authenticators/DS28E83.html>

or maybe this one?

<https://www.maximintegrated.com/en/products/ibutton/memory-products/DS28E80.html>

Also, Gabe wrote this nice summary of short term solutions to the gamma problem with the current chips a the time.

<< File: Dallas Chip Solutions for Gamma Sterilization.doc >>

Hope this helps,

Todd

From: Paul Floyd <Paul.floyd@intusurg.com>
Sent: Friday, October 11, 2019 9:07 AM
To: Todd Radgowski <Todd.Radgowski@intusurg.com>
Cc: Matthew Wixey <Matthew.Wixey@intusurg.com>
Subject: Gamma Compatible RFID

Good Morning Todd,

There has been some discussion surrounding gamma sterilization for the SUD MCS project. One of the challenges is the RFID chip we use is not compatible with gamma. It was mentioned in the meeting that you had found a chip we may be interested in.

Are you able to share what chip you have been exploring?

Thanks,

Paul Floyd
Mechanical Engineer

Mobile: 1 408 621 7430
Direct: 1 408 523 0727
Paul.floyd@intusurg.com

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